

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-22. Canceled

23. (Currently Amended) A mask for delivering breathable gas to a ~~patient~~ user, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

CI a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user;

wherein[[,]] the gusset portion is constructed and arranged such that it can ~~expand and contract~~ be selectively moved within a range of displacement to ~~alter~~ be set at a distance between the mask shell and the cushion, the gusset portion defining a gusset area exposed to the supply of pressurized breathable gas in use such that the supply of pressurized breathable gas acting on the gusset area provides a component of a contact force  $F_c$  of the cushion on the user's face, and

wherein the mask shell, gusset portion, cushion and headgear are structured and arranged with respect to one another in use so that the force  $F_c$  ~~being~~ is maintained in approximately constant proportion to the pressure of the supply of pressurized breathable gas, and a total force

of the mask on the face  $F_m$  ~~being~~ is maintained within a range of about 35-108 grams per  $\text{gf}/\text{cm}^2$  pressure of the supply of pressurized breathable gas to thereby maintain the seal between the mask and the user's face over an operating pressure range of the mask, including a minimum pressure of the operating pressure range.

24. (Original) A mask for delivering breathable gas to a patient as in claim 23, wherein the force  $F_m$  is maintained within a range of about 40-88 grams per  $\text{gf}/\text{cm}^2$  pressure of the supply of pressurized breathable gas.

C 25. (Original) A mask for delivering breathable gas to a patient as in claim 24, wherein the force  $F_m$  is maintained within a range of about 50-88 grams per  $\text{gf}/\text{cm}^2$  pressure of the supply of pressurized breathable gas.

26. (Original) A mask for delivering breathable gas to a patient as in claim 25, wherein the operating pressure range is about 4-25  $\text{gf}/\text{cm}^2$ .

27. (Original) A mask for delivering breathable gas to a patient as in claim 26, wherein the expansion and contraction of the gusset portion permits a seal to be maintained between the cushion and the user's face within a range of about plus and minus 8 degrees angular displacement of the mask shell with respect to the user's face.

28. (Original) A breathable gas mask arrangement as in claim 23, wherein the gusset portion includes a single gusset having a flexible sidewall with a generally triangular cross-section when not exposed to the supply of pressurized breathable gas that balloons to a generally rounded cross-section when exposed to the supply of pressurized breathable gas.

29. (Original) A breathable gas mask arrangement as in claim 23, wherein the gusset portion includes a sidewall having a thickened cross-section at a base of the sidewall.

30. (Original) A breathable gas mask arrangement as in claim 29, wherein the thickened portion has a generally uniform thickness.

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31. (Original) A breathable gas mask arrangement as in claim 29, wherein the gusset portion includes a sidewall having a cross-sectional thickness tapering from a thickened base portion to a thinner portion.

32. (Original) A breathable gas mask arrangement as in claim 23, and further including a generally rigid backstop attached to the mask shell for contacting a first sidewall portion of the gusset portion to limit movement of the first sidewall portion.

33. (Original) A breathable gas mask arrangement as in claim 32, wherein the generally rigid backstop extends around substantially an entire periphery of the gusset portion.

34-124. Canceled

125. (Previously Presented) A mask for delivering breathable gas to a patient as in claim 23, wherein the mask is a nasal mask.

126. (Previously Presented) A mask for delivering breathable gas to a patient as in claim 23, wherein the mask is a CPAP mask.

127. (New) A mask system for delivering breathable gas to a user, comprising:  
a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user, said headgear including length adjustable headgear straps;

wherein, by selectively varying the length of the headgear straps upon initial set up of the mask system, the gusset portion is movable within a range of displacement to be set at a distance between the mask shell and the cushion, the gusset portion defining a gusset area exposed to the supply of pressurized breathable gas in use such that the supply of pressurized breathable gas acting on the gusset area provides a component of a contact force  $F_c$  of the cushion on the user's face, and

wherein the mask shell, gusset portion, cushion and headgear are structured and arranged with respect to one another in use so that the force  $F_c$  is maintained to at least equal a minimum sealing force for the seal between the user and the mask at a minimum operating pressure of the mask.

128. (New) A mask for delivering breathable gas to a user, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

c a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user;

wherein the gusset portion is constructed and arranged such that it can move within a range of displacement to be set at a distance between the mask shell and the cushion, the gusset portion defining a gusset area exposed to the supply of pressurized breathable gas in use such that the supply of pressurized breathable gas acting on the gusset area provides a component of a contact force  $F_c$  of the cushion on the user's face, and

wherein the mask shell, gusset portion, cushion and headgear are structured and arranged with respect to one another in use so that the force  $F_c$  is maintained in approximately constant proportion to the pressure of the supply of pressurized breathable gas, and a total force of the

mask on the face  $F_m$  is maintained within a range of about 35-108 grams per  $\text{gf}/\text{cm}^2$  pressure of the supply of pressurized breathable gas at a minimum operating pressure of the mask.

129. (New) A mask for delivering breathable gas to a user, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a cushion provided to the mask shell and arranged to contact a user's face in use and provide a seal between the mask and the user's face;

a gusset portion provided to the cushion; and

a headgear constructed and arranged to position the mask shell relative to the user;

wherein the gusset portion is constructed and arranged such that it provides a component of a contact force  $F_c$  of the cushion on the user's face, the gusset portion having a configuration and shape so that, in use, the force  $F_c$  is maintained in approximately constant proportion to the pressure of the supply of pressurized breathable gas, and a total force of the mask on the face  $F_m$  is maintained within a predetermined range to maintain the seal between the mask and the user's face, for at least a minimum operating pressure of the mask.

130. (New) A mask system pressurizable to an operating pressure, the mask system comprising:

a mask frame;

a cushion spaced a distance from the mask frame and structured to transfer a force to a face of a user; and

a gusset portion between the mask frame and the cushion, the gusset portion having a gusset area constructed and arranged such that at the operating pressure there is an approximately linear relationship between the force and the distance.

131. (New) A mask system as claimed in claim 130, wherein the mask system is structured such that the force on the face increases as the frame is moved closer to the face.

132. (New) A mask system pressurizable to an operating pressure, the mask system comprising:

a mask frame;

c) a cushion spaced a distance from the mask frame and structured to transfer a force to a face of a user; and

a gusset portion between the mask frame and the cushion, the gusset portion including a side wall having at least one of a pressure-dependent projected area and a spring-like portion with a pressure-dependent and/or distance-dependent spring constant such that the force and the distance are approximately inversely proportional at a given operating pressure.

133. (New) A mask system as claimed in claim 132, in which the side wall includes both the pressure-dependent projected area and the spring-like portion.

134. (New) A mask system pressurizable to an operating pressure, the mask system comprising:

a mask frame;

a cushion spaced a distance from the mask frame and structured to transfer a force to a face of a user; and

a gusset portion between the mask frame and the cushion, the gusset portion including means for establishing an approximately inversely proportional relationship between the force and the distance at a given operating pressure.

135. (New) A mask system for delivering breathable gas to a user, comprising:

a mask shell having a portion adapted to receive a supply of pressurized breathable gas and a user side;

a gusset portion having a first side attached to the user side of the shell and having a second side;

a cushion having a first portion constructed and arranged to attach to the second side of the gusset portion and a second portion constructed and arranged to contact a user's face in use and provide a seal between the mask and the user's face; and

a headgear constructed and arranged to attach the mask shell to the user, said headgear including length adjustable headgear straps;

wherein, by selectively varying the length of the headgear straps upon initial set up of the mask system, the gusset portion is movable within a range of displacement to be set at a distance between the mask shell and the cushion, the gusset portion defining a gusset area exposed to the supply of pressurized breathable gas in use such that the supply of pressurized breathable gas acting on the gusset area provides a component of a contact force  $F_c$  of the cushion on the user's face, and



wherein the gusset portion includes means<sup>\*</sup> for maintaining the force  $F_c$ , in use, to at least equal a minimum sealing force for the seal between the user and the mask at a minimum operating pressure of the mask.

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